

```

BBBBBBBBBBBBBB      AAAAAAAAAA      SSSSSSSSSSSSSS      RRRRRRRRRRRR      TTTTTTTTTTTTTTTT      LLL
BBBBBBBBBBBBBB      AAAAAAAAAA      SSSSSSSSSSSSSS      RRRRRRRRRRRR      TTTTTTTTTTTTTTTT      LLL
BBBBBBBBBBBBBB      AAAAAAAAAA      SSSSSSSSSSSSSS      RRRRRRRRRRRR      TTTTTTTTTTTTTTTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBBBBBBBBBBBBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBBBBBBBBBBBBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBBBBBBBBBBBBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAAAAAAAAAAAAAAAAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAAAAAAAAAAAAAAAAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAAAAAAAAAAAAAAAAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBB      BBB      AAA      AAA      SSS      SSS      RRR      RRR      TTT      TTT      LLL
BBBBBBBBBBBBBB      AAA      AAA      SSSSSSSSSSSSSS      RRR      RRR      TTT      TTT      LLL
BBBBBBBBBBBBBB      AAA      AAA      SSSSSSSSSSSSSS      RRR      RRR      TTT      TTT      LLL
BBBBBBBBBBBBBB      AAA      AAA      SSSSSSSSSSSSSS      RRR      RRR      TTT      TTT      LLL

```

```
BBBBBBBBB      AAAAAA      SSSSSSSS      TTTTTTTTTT      RRRRRRRR      MM      MM
BBBBBBBBB      AAAAAA      SSSSSSSS      TTTTTTTTTT      RRRRRRRR      MM      MM
BB      BB      AA      AA      SS      SS      TT      RR      RR      MMMM      MMMM
BB      BB      AA      AA      SS      SS      TT      RR      RR      MMMM      MMMM
BB      BB      AA      AA      SS      SS      TT      RR      RR      MM      MM      MM
BBBBBBBBB      AA      AA      SSSSSS      TT      RRRRRRRR      MM      MM      MM
BBBBBBBBB      AA      AA      SSSSSS      TT      RRRRRRRR      MM      MM      MM
BB      BB      AAAAAAAAAA      SS      TT      RR      RR      MM      MM      MM
BB      BB      AAAAAAAAAA      SS      TT      RR      RR      MM      MM      MM
BB      BB      AA      AA      SS      SS      TT      RR      RR      MM      MM      MM
BB      BB      AA      AA      SSSSSSSS      TT      RR      RR      MM      MM      MM
BBBBBBBBB      AA      AA      SSSSSSSS      TT      RR      RR      MM      MM      MM
BBBBBBBBB      AA      AA      SSSSSSSS      TT      RR      RR      MM      MM      MM
      . . . .
      . . . .
      . . . .
      . . . .
```

```
LL      IIIIII      SSSSSSSS
LL      IIIIII      SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLL      IIIIII      SSSSSSSS
LLLLLLLLLL      IIIIII      SSSSSSSS
```

(2) 53  
(4) 119

DECLARATIONS  
BAS\$TRM

- Delete trailing blanks and spaces

```
0000 1      .TITLE BASSTRM
0000 2      .IDENT /1-008/
0000 3
0000 4      ; File: BASSTRM.MAR      Edit: SBL1008
0000 5
0000 6      *****
0000 7      *
0000 8      *  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
0000 9      *  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.
0000 10     *  ALL RIGHTS RESERVED.
0000 11     *
0000 12     *  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED
0000 13     *  ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE
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0000 15     *  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY
0000 16     *  OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY
0000 17     *  TRANSFERRED.
0000 18     *
0000 19     *  THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE
0000 20     *  AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT
0000 21     *  CORPORATION.
0000 22     *
0000 23     *  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
0000 24     *  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0000 25     *
0000 26     *  *****
0000 27     *
0000 28     *
0000 29     *  ++
0000 30     *  FACILITY: BASIC code support
0000 31     *
0000 32     *  ABSTRACT:
0000 33     *
0000 34     *      This module implements the BASIC-PLUS-2 EDIT$ function.
0000 35     *
0000 36     *  ENVIRONMENT: User Mode, AST Reentrant
0000 37     *
0000 38     *  --
0000 39     *  AUTHOR: R. WILL, CREATION DATE: 2-May-79
0000 40     *
0000 41     *  MODIFIED BY:
0000 42     *
0000 43     *  R. Will, : VERSION 1
0000 44     *  1-001 - Original
0000 45     *  1-002 - Fix order of source and dest str in TRM. RW 16-May-79
0000 46     *  1-003 - Enable IV in entry masks. RW 23-May-79
0000 47     *  1-004 - Change calls to STR$COPY. JBS 16-JUL-1979
0000 48     *  1-005 - Make PIC. RW 13-Sept-79
0000 49     *  1-006 - String cleanup, call STR$TRM. RW 31-Oct-79
0000 50     *  1-007 - Make TRM a separate module. RW 13-Nov-79
0000 51     *  1-008 - Use general mode addressing. SBL 30-Nov--1981
```



## DECLARATIONS

```
0000 53      .SBTTL  DECLARATIONS
0000 54      :
0000 55      : INCLUDE FILES:
0000 56      :
0000 57      :
0000 58      $DSCDEF                      : Define descriptor offsets
0000 59      :
0000 60      :
0000 61      : EXTERNAL DECLARATIONS:
0000 62      :
0000 63      .DSABL  GBL                  : Prevent undeclared
0000 64      :                                     : symbols from being
0000 65      :                                     : automatically global.
0000 66      :
0000 67      .EXTRN  STR$TRIM             : routine to trim blanks and tabs
0000 68      :
0000 69      :
0000 70      : MACROS:
0000 71      :
0000 72      :
0000 73      :+
0000 74      : Macro to generate tables to translate ASCII characters. This macro
0000 75      : will generate a table of bytes starting at the designated character
0000 76      : for the series of characters needed.
0000 77      :-
0000 78      :
0000 79      .MACRO  GEN TRANS_TABLE, NUMBER_OF_CHARS, STARTING_CHAR
0000 80      I = STARTING_CHAR
0000 81      .REPT  NUMBER_OF_CHARS
0000 82      .BYTE  I
0000 83      I = I + 1
0000 84      .ENDR
0000 85      .ENDM
0000 86      :
0000 87      :
0000 88      : EQUATED SYMBOLS:
0000 89      :
0000 90      :
00000020 0000 91      blank              = ^A/ /
00000001 0000 92      space_or_tab      = ^X0001
00000002 0000 93      junk_byte         = ^X0002
00000004 0000 94      quote             = ^X0004
00000003 0000 95      space_tab_junk    = ^X0003
0000 96      :
00000000 0000 97      trim_parity_bit   = 0
00000001 0000 98      disc_sp_tab_bit   = 1
00000002 0000 99      disc_junk_bit     = 2
00000003 0000 100     disc_lead_bit     = 3
00000004 0000 101     compact_bit       = 4
00000005 0000 102     upper_case_bit    = 5
00000006 0000 103     parens_bit        = 6
00000007 0000 104     disc_trail_bit    = 7
00000008 0000 105     ignor_quote_bit   = 8
0000 106      :
0000 107      :
0000 108      : OWN STORAGE:
0000 109      :
```

BAS\$TRM  
1-008

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6-SEP-1984 10:38:28 [BASRTL.SRC]BASTRM.MAR;1

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(2)

DECLARATIONS

0000 110  
0000 111  
0000 112  
0000 113  
00000000 114  
0000 115  
0000 116

: PSECT DECLARATIONS:

.PSECT \_BAS\$CODE PIC, USR, CON, REL, LCL, SHR, -  
EXE, RD, NOWRT, LONG

## DECLARATIONS

```
0000 118
0000 119      .SBTTL BAS$TRM      - Delete trailing blanks and spaces
0000 120      ++
0000 121      : FUNCTIONAL DESCRIPTION:
0000 122      :
0000 123      : This routine deletes trailing tabs and spaces from the source string
0000 124      : and then uses STR$COPY to write the string in the destination. It
0000 125      : finds the last non-blank character by starting at the end of the
0000 126      : string and using each character to index into a table that has a
0000 127      : flag for spaces and tabs.
0000 128
0000 129      : CALLING SEQUENCE:
0000 130      :
0000 131      : CALL BAS$TRM (dest_string.wx.dx, src_string.rx.dx)
0000 132
0000 133      : INPUT PARAMETERS:
0000 134      :
00000008 0000 135      : src_string = 8
0000 136      :
0000 137      : IMPLICIT INPUTS:
0000 138      :
0000 139      : NONE
0000 140
0000 141      : OUTPUT PARAMETERS:
0000 142      :
00000004 0000 143      : dest_string = 4
0000 144      :
0000 145      : IMPLICIT OUTPUTS:
0000 146      :
0000 147      : NONE
0000 148
0000 149      : FUNCTION VALUE:
0000 150      : COMPLETION CODES:
0000 151      :
0000 152      : NONE
0000 153
0000 154      : SIDE EFFECTS:
0000 155      :
0000 156      : STR$COPY may allocate space to the destination string. Any of
0000 157      : STR$COPY's errors may be signalled.
0000 158
0000 159      :--
0000 160
0000 161      : .ENTRY BAS$TRM, ^M<>
0002 162
0002 163      :+
0002 164      : Register usage
0002 165      :-
0002 166
00000000'GF 6C FA 0002 167      CALLG (AP), G^STR$TRIM
0009 168      RET
000A 169
000A 170      : End of BAS$TRM
```



```

000A 172 :+
000A 173 : The following tables are used for the SPANC, SCANC, and MOVTC instructions
000A 174 : used in the BASSEDIT routine
000A 175 :-
000A 176
000A 177
000A 178 :+
000A 179 : Table used to 'remove parity bit' from all characters in the character
000A 180 : string. Used to ensure that the high bit is clear on all characters.
000A 181 :-
000A 182
000A 183 PARITY_TAB:
000A 184     GEN_TRANS_TABLE 128, 0           ; fill ASCII character set
008A 185     GEN_TRANS_TABLE 128, 0       ; truncate hi bit
010A 186
010A 187 :+
010A 188 : Table used to translate lower case to uppercase. Translate rest of
010A 189 : ASCII character set to self.
010A 190 :-
010A 191
010A 192 UPCASE_TAB:
010A 193     GEN_TRANS_TABLE 97, 0           ; fill table to start of lowercase
016B 194     GEN_TRANS_TABLE 26, 65      ; translate lower to upper
0185 195     GEN_TRANS_TABLE 133, 123    ; finish table, translate to self
020A 196
020A 197 SQBRAK_TO_PAREN:
020A 198     GEN_TRANS_TABLE 91, 0           ; translate to self
0265 199     .BYTE 40                     ; translate [ to (
0266 200     .BYTE 92                     ; translate to self
0267 201     .BYTE 41                     ; translate ] to )
0268 202     GEN_TRANS_TABLE 162, 94       ; translate remainder to self
030A 203
030A 204 UPCASE_PAREN:
030A 205     GEN_TRANS_TABLE 91, 0           ; translate to self
0365 206     .BYTE 40                     ; translate [ to (
0366 207     .BYTE 92                     ; translate to self
0367 208     .BYTE 41                     ; translate ] to )
0368 209     GEN_TRANS_TABLE 3, 94         ; translate to self
036B 210     GEN_TRANS_TABLE 26, 65      ; translate lower to upper
0385 211     GEN_TRANS_TABLE 133, 123    ; finish table, translate to self
040A 212
040A 213 SCAN_SPAN_TABLE:
040A 214     .BYTE junk_byte               ; NUL
040B 215     .BYTE 0[8]                  ; skip over
0413 216     .BYTE space_or_tab          ; tab
0414 217     .BYTE junk_byte              ; LF
0415 218     .BYTE 0                       ; skip over
0416 219     .BYTE junk_byte[2]            ; FF and CR
0418 220     .BYTE 0[13]                  ; skip over
0424
0425 221     .BYTE junk_byte               ; ESC
0426 222     .BYTE 0[4]                   ; skip over
042A 223     .BYTE space_or_tab            ; space
042B 224     .BYTE 0                       ; skip over
042C 225     .BYTE quote                  ; double quote
042D 226     .BYTE 0[4]                   ; skip over
0431 227     .BYTE quote                  ; single quote

```



- Delete trailing blanks and

|  |      |
|--|------|
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 0432 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 043E |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 044A |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 0456 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 0462 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 046E |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 047A |
| 00'00'00'                                  | 0486 |
| 02   | 0489 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 048A |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 0496 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04A2 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04AE |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04BA |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04C6 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04D2 |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04DE |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04EA |
| 00'00'00'00'00'00'00'00'00'00'00'00'00'00' | 04F6 |
| 00'00'00'00'00'00'00'00'00'                | 0502 |
|  | 050A |

```

228      .BYTE      0[87]      ; skip over

229      .BYTE      junk byte  ; DEL
230      .BYTE      0[128]     ; skip over

231      .END

```

BAS\$TRM  
Symbol table

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15-SEP-1984 23:58:04 VAX/VMS Macro V04-00  
6-SEP-1984 10:38:28 [BASRTL.SRC]BASTRM.MAR;1

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BAS\$TRM 00000000 RG 02  
JUNK\_BYTE = 00000002  
PARITY\_TAB 0000000A R 02  
QUOTE = 00000004  
SCAN\_SPAN\_TABLE 0000040A R 02  
SPACE\_OR\_TAB = 00000001  
SQBRAR\_TO\_PAREN 0000020A R 02  
STR\$TRM \*\*\*\*\* X 00  
UPCASE\_PAREN 0000030A R 02  
UPCASE\_TAB 0000010A R 02

+-----+  
! Psect synopsis !  
+-----+

| PSECT name | Allocation        | PSECT No. | Attributes  |
|------------|-------------------|-----------|---|
| . ABS .    | 00000000 ( 0.)    | 00 ( 0.)  | NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE |
| \$AB\$\$   | 00000000 ( 0.)    | 01 ( 1.)  | NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE       |
| _BAS\$CODE | 0000050A ( 1290.) | 02 ( 2.)  | PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG         |

+-----+  
! Performance indicators !  
+-----+

| Phase                  | Page faults | CPU Time    | Elapsed Time |
|------------------------|-------------|-------------|--------------|
| Initialization         | 29          | 00:00:00.07 | 00:00:00.54  |
| Command processing     | 104         | 00:00:00.48 | 00:00:02.44  |
| Pass 1                 | 226         | 00:00:07.60 | 00:00:15.55  |
| Symbol table sort      | 0           | 00:00:00.19 | 00:00:00.40  |
| Pass 2                 | 57          | 00:00:01.72 | 00:00:03.86  |
| Symbol table output    | 2           | 00:00:00.02 | 00:00:00.02  |
| Psect synopsis output  | 2           | 00:00:00.03 | 00:00:00.03  |
| Cross-reference output | 0           | 00:00:00.00 | 00:00:00.00  |
| Assembler run totals   | 422         | 00:00:10.11 | 00:00:22.84  |

The working set limit was 1350 pages.  
53938 bytes (106 pages) of virtual memory were used to buffer the intermediate code.  
There were 10 pages of symbol table space allocated to hold 155 non-local and 0 local symbols.  
231 source lines were read in Pass 1, producing 15 object records in Pass 2.  
9 pages of virtual memory were used to define 8 macros.

+-----+  
! Macro library statistics !  
+-----+

| Macro library name                  | Macros defined |
|-------------------------------------|----------------|
| _\$255\$DUA28:[SYSLIB]STARLET.MLB;2 | 4              |

190 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:BASTRM/OBJ=OBJ\$:BASTRM MSRC\$:BASTRM/UPDATE=(ENH\$:BASTRM)



0032 AH-BT13A-SE  
VAX/VMS V4.0

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